Protecting Vitamins C and E

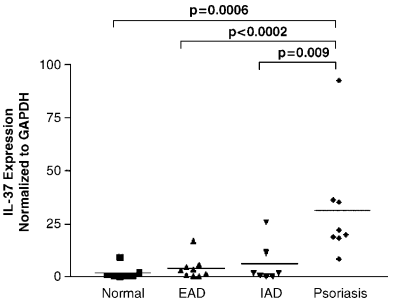
Plants make vitamins C and E to protect themselves from sunlight, but humans can't synthesize these vitamins. While diet or vitamin supplements supply our needs, our bodies limit the amount of antioxidants that can be delivered to skin. Lin and colleagues were surprised to find that ferulic acid, a potent and common plant antioxidant, chemically stabilized vitamins C and E in a topical solution of 15% L-ascorbic acid and 1% α-tocopherol, doubling photoprotection to solar-simulated skin irradiation from fourfold to almost eightfold, as measured by both erythema and sunburn cell formation. This combination should be useful to protect against photoaging and skin cancer. J Invest Dermatol 125:826–833, 2005.

Hedgehog Hair Care

The hedgehog (Hh) signaling proteins are linked to the development and patterning of almost every major vertebrate organ system. Paladini and coworkers showed that one application of the small molecule agonists of the Hh pathway stimulated the telogen-to-anagen transition in adult mouse hair follicles. They also demonstrated that the Hh-agonist treatment did not appear to have any long-term effects on the skin and that the Hh-agonist is active in human scalp. The use of the Hh-agonist may be a potential therapeutic agent in the treatment of male and female pattern hair loss. Hedgehog hairstyles could make spiked hair obsolete. J Invest Dermatol 125: 638–646, 2005.

Infection in Atopic Dermatitis

Recurrent skin infections in extrinsic atopic dermatitis (EAD) may be due to the suppression of anti-microbial peptide (AMP) expression by IL-4 and IL-13. But 20–30% of AD are classified as intrinsic (IAD), exhibiting normal serum IgE levels, no allergen-specific sensitization, and lower levels of IL-4 and IL-13 than EAD. Compared to psoriasis patients, Howell *et al* observed significantly decreased human β-defensin-2 gene expression in both EAD and IAD patients. Conversely, IAD and EAD skin lesions exhibited elevated IL-10 gene expression compared to psoriatics. In skin explants, IL-10 administration augmented the expression of human β-defensin (HBD)-2 and the cathelicidin LL-37, and may contribute to the AMP deficiency in both AD conditions by reducing cytokines that induce AMP. J Invest Dermatol 125:738–745, 2005.



Look at Older Men

Swetter and colleagues at Stanford assessed the incidence of melanoma subtypes in regional and national cancer registries along with records of an age-matched population of 1024 cases from their own center. In both groups, lentigo maligna (LM) comprised $\geq$ 75% of *in situ* melanoma, and lentigo maligna melanoma (LMM), its invasive counterpart, comprised $\geq$ 27% of invasive melanoma in men aged 65 and older. Long-term UV radiation is believed to be the most important risk factor for developing these melanoma subtypes. Health care providers are alerted to better screen chronically sun-exposed skin in men middle-aged and older. J Invest Dermatol 125: 685–691, 2005.

Relaxin Knockout Mouse is Fibrotic

Samuel and colleagues used relaxin-deficient (RLX-/-) mice and demonstrated an age-related progression of dermal fibrosis and thickening, similar to that seen in scleroderma. Application with recombinant H2 relaxin resulted in a complete reversal of dermal fibrosis during the disease's early onset, but was ineffective when applied to established dermal scarring. Relaxin provides a means to regulate excessive collagen deposition in dermal fibrosis, and this study of relaxin-null mice links relaxin to changes in collagen turnover in normal skin. J Invest Dermatol 125: 692–699, 2005.